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## **Chapter 1**

# **Overview of Guidance for CERCLA Removal Actions**

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## 1.1 The CERCLA Removal Action Process

### Legislative and Regulatory Framework

In passing the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Congress gave the Federal Government broad authority to respond to hazardous substance emergencies, and to develop long-term solutions for the Nation's most serious hazardous waste problems. CERCLA also created a \$1.6 billion Hazardous Substance Response Trust Fund to pay for cleanup activities at abandoned waste sites.

In 1986, the Superfund Amendments and Reauthorization Act of 1986 (SARA) was enacted. **SARA** expanded the Federal Government's response authorities and **clarified** that federal facilities are subject to the same CERCLA requirements as private industry. SARA also clarified that federal agencies and departments are responsible for conducting long-term actions at federal facility sites. Executive Order 12580, signed in January 1987, further clarified that federal agencies and departments are responsible for most response actions at sites within their control or jurisdiction. In 1990, Congress passed a four-year extension of the response authority for CERCLA.

The CERCLA response effort is guided by the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR **300**), commonly referred to as the National Contingency Plan (NCP). This plan outlines the steps federal agencies must follow in responding to situations in which hazardous substances, pollutants or contaminants, or oil are released into the environment. The NCP establishes the criteria, methods, and procedures the U.S. Environmental Protection Agency (EPA) and other federal agencies, in particular those granted lead authority under 40 CFR 300.120, use to determine priority releases for long-term evaluation and response. These priority releases are on the National Priorities List (NPL). The national goal described in the NCP is to select remedies that are protective of human health and the environment, that maintain protection over time, and that minimize untreated waste.

In addition to CERCLA and the NCP, the U.S. Department of Energy (DOE) must address the requirements of all other federal and state environmental laws and regulations when conducting response actions. DOE complies fully with all requirements of the National Environmental Policy Act (NEPA). The NEPA process is a valuable planning tool and provides an opportunity to improve DOE decisions and build public trust. DOE is implementing new policies that will streamline the NEPA process, minimize the cost and time for document preparation and review, and make the process more useful to decision-makers and the public.

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In this effort, DOE issued a *Secretarial Policy on the National Environmental Policy Act* in June 1994. Under this policy, DOE will rely on the CERCLA process for review of actions to be taken under CERCLA, and will address NEPA values and public involvement procedures in all CERCLA documentation. CERCLA documents should incorporate NEPA values such as analysis of cumulative, off-site, ecological, and socioeconomic impacts, to the extent practicable. DOE Environmental Restoration Program Managers (ERPMS) should refer to this Secretarial Policy and any future implementing guidance when preparing CERCLA documentation for removal actions.

CERCLA, as amended by SARA, and the NCP provide authority for two types of response actions: removal actions and remedial actions. Removal actions are short-term actions taken to clean up or remove released hazardous substances or pollutants or contaminants; mitigate a threat of release of hazardous substances; monitor and evaluate release conditions; dispose of removed material; and/or mitigate or prevent damage to public health, welfare, or the environment. Remedial actions include the study, design, and construction of longer-term actions aimed at permanent remedy.

**CERCLA  
Removal Action  
Categories and  
Factors**

The NCP categorizes removal actions in three ways: 1) emergency removal actions, 2) time-critical removal actions, and 3) non-time-critical removal actions. These categories are based on the type of situation, the urgency of the threat of the release, and the subsequent time frame in which the action must be initiated. Emergency removal actions are necessary when there is a release that requires on-site activities to begin within hours or days. Time-critical removal actions are taken in response to releases requiring on-site action within six months. Non-time-critical removal actions are taken when a removal action is determined to be appropriate, but a planning period of at least six months is available before on-site activities must begin.

Each release of hazardous substances or pollutants or contaminants is unique and may require a more expedited response based on the threatened population, contaminants of concern, and other site-specific factors. If there is a release or threat of release, the DOE ERPM should consider the factors outlined in section 300.415(b) of the NCP to *determine the appropriateness* of taking a removal action. The ERPM is the official designated by DOE to coordinate and direct removal or remedial action responses under CERCLA and the NCP. These factors are as follows:

- Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

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- Actual or potential contamination of drinking water supplies or sensitive ecosystems;
  - Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may *pose* a threat of release;
  - High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
  - Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;
  - Threat of **fire** or explosion;
  - The availability of other appropriate federal or state response mechanisms to respond to the release; and,
  - Other situations or factors that may pose threats to public health or welfare or the environment.

Removal actions can be taken to address a variety of site situations including inactive waste management facilities such as open dumps or landfills that have been closed down or abandoned, accidental releases during facility operations, active manufacturing or waste disposal facilities and operating landfills, and transportation-related accidents such as toxic chemical releases from derailed trains or **overturned** trucks.

Section 300.415(d) of the NCP lists removal actions that address specific situations. In general, **removal actions** can **include**, but are not limited to, one or more of the following activities:

- Fences, warning signs, or other security or site control **precautions**—where humans or animals have access to the release;
- Drainage controls, for example, run-off or run-on diversion—where needed to reduce migration of hazardous substances or pollutants or contaminants off-site or to prevent precipitation or run-off from other sources, for example, flooding, from entering the release area from other areas;
- Stabilization of **berms**, dikes, or impoundments or drainage or closing of **lagoons**—where needed to maintain the integrity of structures;

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- Capping of contaminated soils or sludges-where needed to reduce migration of hazardous substances or pollutants or contaminants into soil, ground or surface water, or air;
  - Using chemicals and other materials to retard the spread of the release or to mitigate its effects-where the use of such chemicals will reduce the spread of the release;
  - Excavation, consolidation, or removal of highly contaminated soils from drainage or other areas-where such actions will reduce the spread of, or direct contact with, the contamination;
  - Removal of drums, barrels, tanks, or other bulk containers that contain or may contain hazardous substances or pollutants or contaminants-where it will reduce the likelihood of spillage; leakage; exposure to humans, animals, or food chain; or fire or explosion;
  - Containment, **treatment**, disposal, or incineration of hazardous materials-where needed to reduce the likelihood of human, animal, or food chain exposure; and,
  - Provision of alternate water supply-where necessary immediately to reduce exposure to contaminated household water and continuing until such time as local authorities can satisfy the need for a permanent remedy.

### **Statutory Limits on Removal Actions**

Removal actions funded with CERCLA monies are limited by law to 12 months in duration and \$2 million in total project costs, unless an exemption is granted to those statutory limits. CERCLA section 104(c) authorizes two types of exemptions: 1) emergency exemption and 2) consistency exemption. An emergency exemption may be appropriate in situations where **there** is an immediate risk to public health, welfare, or the environment and where continued response actions are immediately required to prevent, limit, or mitigate an emergency and other assistance will not be provided on a timely basis. A consistency exemption may be appropriate in situations where continued response actions are otherwise appropriate and consistent with the remedial action to be taken at the site.

Because DOE response actions are not financed with CERCLA funds, they are not specifically subject to the 12-month and **\$2-million** statutory limits. While not required to adhere to these limits, DOE uses the removal limits to plan and assess the cost-effectiveness of DOE removal actions. **ERPMS** should review applicable Federal Facility Agreements (**FFAs**) to determine if other site-specific limits on removal actions exist.

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### **The Superfund Accelerated Cleanup Model**

In 1992, EPA developed a plan to move sites more quickly through the CERCLA process. This plan, called the Superfund Accelerated Cleanup Model (SACM), is designed to include substantial prioritized risk reduction in shorter time frames and to better communicate program accomplishments to the public. SACM is intended to expedite cleanup and increase efficiency in the Superfund process within the framework of CERCLA and the NCP. Specifically, SACM focuses efforts on the front end of the cleanup process and better integrates all Superfund program components. The SACM approach involves four key concepts:

- A continuous process for assessing site-specific conditions and the need for action;
- Coordination of all response planning;
- Prompt risk reduction through early actions (i.e., emergency removal actions, time-critical removal actions, non-time-critical removal actions, or interim remedial actions); and,
- Appropriate cleanup of long-term environmental problems through long-term remedial actions.

Other federal agencies have been encouraged to adopt the SACM concept in pursuing their cleanup efforts.

### **CERCLA Reauthorization**

CERCLA is scheduled to be reauthorized in 1994. Legislative changes being considered in the Superfund Reform Act would place an increased emphasis on using removal actions or interim remedial actions to achieve immediate risk reduction. These types of early actions could be taken any time and would be considered whenever a cost-effective means exists to mitigate continuing and immediate threats to human health and the environment.

To remove certain impediments, the Superfund Reform Act outlines several statutory changes in removal authority. First, the dollar limit on **Fund**-financed removal actions would increase from \$2 million to \$4 million. Second, the time for completion would be expanded from one year to two years. Third, the “consistency” exemption would be modified to clarify that an exemption is available where the nature of the long-term remedial action was uncertain or where it was expected that the removal action would make remedial action unnecessary. Fourth, the statutory definition of a removal action would be modified to clarify that removal authority is not limited to emergency situations or short-term actions. **Fifth**, to address concerns that

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increased use of removal authority may reduce public participation, the existing regulatory requirement for advance notice and opportunity for comment in non-time-critical removal actions would be required.

ERPMS should coordinate with DOE's Office of Environment, Safety and Health to obtain up-to-date information on legislative and regulatory changes, new interpretive policies, recently issued court opinions, and revised DOE orders that relate to CERCLA removal actions. This guidance document will be revised as legislative changes are made that impact removal action decision-making and operations.

**DOE Removal  
Action  
Responsibilities**

Sections 300.120(b)(1) and 300.175(b)(5) of the NCP establish the role of DOE in conducting CERCLA removal actions. In general, DOE must provide designated ERPMS (the equivalent of the CERCLA-established **On-Scene Coordinators**) who are responsible for taking all response actions where either the release is on, or the sole source of the release is from a DOE facility or vessel. Executive Order 12580 specifically delegates to DOE the authority to select and conduct removal actions independent of EPA approval. The ERPMS may delegate certain response activities to other DOE personnel or contractors. ERPMS should review sections **300.110, 300.115, 300.145, 300.170, 300.175, 300.180**, and 300.185 of the NCP to determine the types of support that may be available from other federal agencies, state and local governments, and private entities in responding to CERCLA releases of hazardous substances or pollutants or contaminants.

**CERCLA  
Removal Action  
Process  
Overview**

**Figure 1.1** depicts the major steps in the CERCLA removal action process. While the individual steps are the same for emergency removal actions, time-critical removal actions, and non-time-critical removal actions, the amount of time available before on-site activity must begin varies depending on the urgency of the situation.

CERCLA and the NCP outline a variety of methods for discovering and reporting releases of hazardous substances or pollutants or contaminants. In general, there **are** two primary methods for discovering and notifying appropriate authorities of releases or threats of releases: (1) discovery through notification from the National Response Center and (2) discovery by DOE facility personnel.

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Once a release or threat of release is discovered, certain information must be collected in order to notify the appropriate federal, state, and local authorities and begin determining whether CERCLA authority applies. Gathering key information does not entail a full-scale removal site evaluation (**RSE**). Key information should be readily available and be specific enough to make the necessary notifications under federal and state **law**, local ordinances, and internal DOE Orders. DOE Orders supplement the existing requirements of federal and state regulations.

Following the collection of key information about a release or threat of release, it may be necessary to collect additional information to assess the situation. Before conducting any removal action, section 300.415 of the NCP requires that the results of an RSE be reviewed to determine if a removal action is appropriate. NCP section 300.410 describes the RSE and its components-the removal preliminary assessment (PA) and removal site inspection (**SI**). The RSE should provide enough information to determine the need for and the urgency of a removal action.

If the results of the RSE indicate that a removal action is appropriate, the decision is documented and on-site response activities are initiated. The **requirements** for conducting and closing out emergency, time-critical, and non-time-critical removal actions are similar. Additional procedural and regulatory requirements exist for those actions with a longer planning and response time.

It is important to note that individual **FFAs** or interagency agreements (**IAGs**) may contain additional removal action criteria and reporting requirements. The ERPM should always refer to the applicable FFA or IAG when making removal action decisions.

**DOE's  
Response  
Action Strategy**

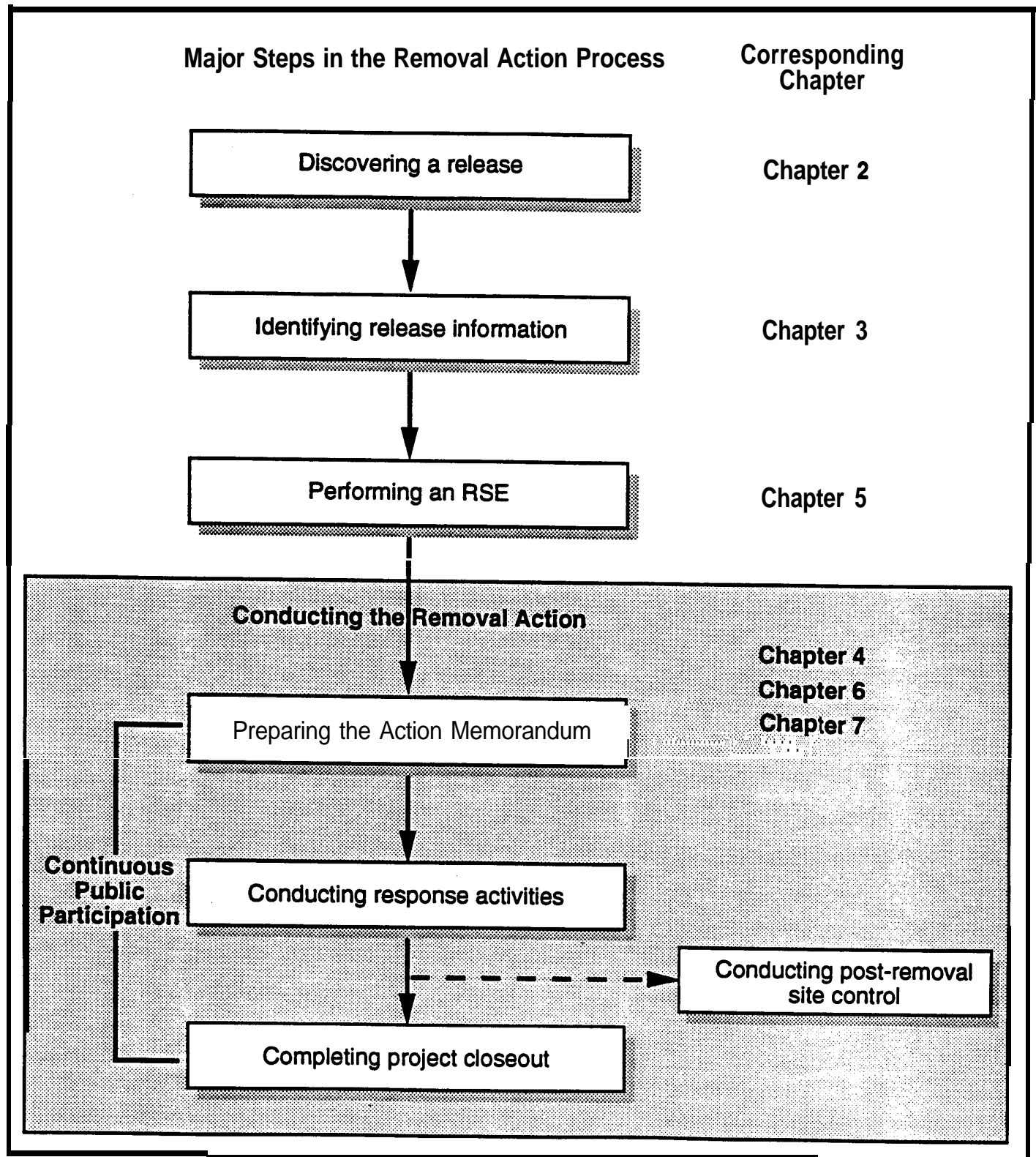
A hallmark of the CERCLA removal program is the ability of response managers to take quick actions to **address** releases or threats of releases of hazardous substances or pollutants or contaminants. Because removal actions do not require extensive, time-consuming, and costly study and analysis, risks to human health and the environment can be reduced immediately. Removal actions can be taken to respond to emergencies, address entire operable units, or achieve prompt risk reduction prior to a remedial response. In many instances, it may be reasonable to complete the cleanup entirely using only removal action authority. In addition, a major goal of DOE removal actions is to contribute to the efficiency of long-term remedial actions.



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ERPMS have a solid legal foundation for taking early actions to reduce site risks. CERCLA and the NCP provide the framework that allows ERPMS the flexibility to choose a variety of quick actions to facilitate cleanup. ERPMS should not hesitate to take maximum advantage of this statutory and regulatory flexibility. Expanding the use of removal action authority is consistent with EPA's approach to accelerating site cleanup and is supported **fully** by DOE.

**Figure 1.1**  
**CERCLA Removal Action Process**



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## 1.2 Purpose

This guidance is structured to highlight the statutory and regulatory basis for removal action decision-making. The guidance further seeks to address the advantages of using removal action authority to take early action. DOE ERPMs should use this guidance to understand the laws and regulations that support removal action decision-making in the field. Complementary guidance on conducting long-term remedial actions can be found in ***Remedial Investigation/Feasibility Study (RI/FS) Process, Elements, and Techniques Guidance***.

This guidance package is designed to assist DOE ERPMs by providing **step-by-step** procedures for completing CERCLA removal actions. The guidance uses tables, flowcharts, and checklists to provide a “roadmap” for complying with the requirements and intent of CERCLA and the NCP. This guidance is tailored to DOE personnel who have line management or oversight responsibilities for CERCLA removal actions at DOE facilities.

DOE personnel should use this guidance as:

- An overview of the regulatory requirements for conducting a CERCLA removal action;
- **Step-by-step procedures** for identifying the need for, assessing, conducting, and closing out a removal action; and
- A quick, **ready-reference guide** for specific topics concerning removal action decision-making and implementation.

***This guidance does not provide detailed engineering and operational guidelines for field implementation of specific removal action activities.***

This guidance, however, does refer the reader to available procedures and technical or operational guidance documents at the conclusion of each chapter.

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## 1.3 How To Use This Guidance

This guidance is organized into chapters and modules according to the major steps in conducting CERCLA removal actions. Removal action activities that are the same for all situations are introduced once and cross-referenced in subsequent chapters. Section 1.4 of this chapter describes the information contained in the subsequent chapters of this guidance. You should proceed to the appropriate chapter to understand the requirements for specific removal action situations.

Each chapter contains a table of contents, an introduction to the chapter, an overview graphic, a number of modules addressing a specific topic, a milestone checklist, and scenarios to illustrate how to apply the information in the chapter. The introduction to each chapter contains summary milestones for the chapter. These milestones are the questions that can be answered by reading the chapter. To learn more about a specific issue, refer to the chapter addressing that issue. For example, Chapter 5 describes the steps in completing a removal site evaluation.

Each module within each chapter contains an introduction, milestones that highlight specific actions or decisions addressed in that module, a **step-by-step** flowchart, and an explanation of each step in the flowchart. Each module is designed to be brief and cover a specific subtopic. For example, Chapter 5, Module B describes the steps in completing a removal site inspection.

In an effort to keep this guidance short and user-friendly, extensive references have been included at the conclusion of each chapter rather than incorporating detailed information from other available documents. The reader is encouraged to refer to these individual references for more information on a particular topic.

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## 1.4 Overview of Chapters

**Chapter 2:  
Release  
Discovery** This chapter identifies methods for discovering releases of hazardous substances or pollutants or contaminants. Module A describes the role of the National Response Center as a clearinghouse for release notifications. Module B describes the discovery of releases through incidental observation, standard reporting requirements under federal and state law, and facility inspections. The information in this chapter applies to all removal actions.

**Chapter 3:  
Release  
Information** This chapter identifies the key information about a release that is necessary to determine whether a CERCLA hazardous substance or pollutant or contaminant is involved, and if not, what other response programs **are** potentially available to address the release. Module A describes the types of information the ERPM should gather from the initial report in order to categorize the release. Module B describes what materials are covered by CERCLA authority and specific statutory exemptions for DOE releases. Module C **outlines** additional response authorities that may be available under federal and state law to **address** non-CERCLA materials. The information in this chapter applies to all removal actions.

**Chapter 4:  
Emergency  
Removal  
Actions** This chapter identifies procedures for evaluating, reporting, planning, conducting, and closing out CERCLA emergency removal actions. Module A describes the specific procedures for identifying whether an emergency situation exists. Module B highlights the required notifications under CERCLA/NCP and the Emergency Planning and Community **Right-to-Know Act (EPCRA)**, as well as the situations under which other federal and state agencies must be contacted. Module C describes the documentation that must be developed to justify the need for and the scope of an emergency removal action. Module D describes the public involvement and Administrative Record file requirements that apply to emergency **removal** actions. Module E describes how to mobilize on-site resources, the required site-specific plans, and progress reporting for an emergency removal action. Module F describes how to determine when an emergency removal action is complete, any post-removal site control measures that are necessary, and coordination with future planned remedial actions. While this chapter specifically addresses emergency removal actions, many of the requirements and procedures outlined in the chapter apply to time-critical removal actions and non-time-critical removal actions, as well. Therefore, information contained in this chapter will be **cross-**referenced in subsequent chapters.

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### **Chapter 5: Removal Site Evaluations**

This chapter describes the process for conducting a removal PA and, if necessary, a removal SI for non-emergency situations. Module A describes readily available information that should be reviewed during the PA to identify the nature and source of the release, evaluate the threats or potential threats to human health and the environment, and determine if a removal action is required. Module B describes the types of additional activities that may be conducted during an SI to characterize the release more fully and obtain adequate data for response determination. Module C highlights how to determine-if an RSE indicates that a removal action is necessary. The information in this chapter applies to time-critical and non-time-critical removal actions.

### **Chapter 6: Time-Critical Removal Actions**

This chapter identifies procedures for evaluating, reporting, planning, conducting, and closing out a CERCLA time-critical removal action. This chapter builds on the procedures described in previous chapters, particularly Chapter 4. Module A describes the public involvement and Administrative Record file requirements that apply to time-critical removal actions. Module B describes mobilization of on-site **resources**, required site-specific plans, and progress reporting for time-critical removal actions. Module C describes how to determine when a time-critical removal action is complete, including planning post-removal site control measures and coordinating with future planned removal or remedial actions.

### **Chapter 7: Non- Time-Critical Removal Actions**

This chapter describes the process and requirements for conducting **non-**time-critical removal actions. It focuses on the additional analyses that must be performed and documented in an engineering evaluation/cost analysis (BE/CA). This chapter builds on the procedures outlined in Chapters 4 and 6. Module A describes the public involvement and Administrative Record file requirements that apply to non-time-critical removal actions. Module B describes requirements for identifying removal action objectives and analyzing various removal action alternatives when conducting an **EE/CA**. Module C describes mobilization of on-site resources and reporting progress during a non-time-critical removal action. Module D describes how to determine when a non-time-critical removal action is complete, including **planning** post-removal site control measures and coordinating with future planned actions.

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## 1.5 References

1. Code of Federal Regulations, Title 10, Part 1021, National Environmental Policy Act; Implementing Procedures and Guidelines Revocation.
2. Code of Federal Regulations, Title 40, Part 300, National Oil and Hazardous Substances Pollution Contingency Plan (NCP).
3. 42 U.S.C. **§4321 *et. seq.*** National Environmental Policy Act of 1969 (**NEPA**).
4. 42 U.S.C. **§9601 *et. seq.*** The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).
5. Executive Order 12580: Superfund Implementation (52 FR 2923, January **29, 1987**).
6. U.S. DOE. Order 5400.4: The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Requirements. Washington, DC: U.S. DOE, October 6, 1989.
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9. U.S. EPA, U.S. DOE, U.S. DOD. Guidance on Accelerating CERCLA Environmental Restoration at Federal Facilities. Washington, DC: U.S. EPA, U.S. DOE, U.S. DOD; August **22, 1994**.